

### **Amendments to the Claims**

This listing of claims will replace all prior versions, and listings, of claims in the application.

### **Listing of Claims:**

Claims 1-27 (canceled).

Claim 28 (previously presented): A method for determining a property of a portion of a substrate, the method comprising:

heating a region of a metal layer in the substrate using power modulated at a frequency that is predetermined to be sufficiently low to ensure that at least a majority of heat is transferred out of the region by diffusion rather than by a thermal wave;

measuring a change in reflectance of the metal layer at the frequency of modulation of the power of heating; and

using the change in reflectance in a programmed computer, to determine a measure of electrical conductance of a feature formed by patterning the metal layer.

Claim 29 (previously presented): The method of Claim 28 wherein:  
the frequency is lower than a maximum frequency of 5985 Hz.

Claim 30 (previously presented): The method of Claim 28 further comprising:  
changing the power used in said heating to a new power; and  
repeating at the new power each of said heating, said measuring and said using in said region.

Claim 31 (previously presented): The method of Claim 28 further comprising:  
repeating said heating, said measuring and said using in another region.

Claim 32 (previously presented): The method of Claim 28 wherein:

the feature is a via.

Claim 33 (previously presented): The method of Claim 28 wherein:  
the feature is a conductive line.

Claim 34 (previously presented): The method of Claim 33 wherein:  
the measure is resistance per unit length of the conductive line.

Claim 35 (previously presented): The method of Claim 33 wherein:  
said frequency is smaller than a maximum frequency, said maximum  
frequency being inversely related to at least one of:  
length of the conductive line; and  
a distance at which the temperature of said conductive line is an order of  
magnitude smaller than the temperature in said region.

Claim 36 (previously presented): The method of Claim 28 further comprising:  
forming the metal layer by using at least one process parameter; and  
changing the process parameter if necessary depending on the measure of  
electrical conductance determined during said using.

Claim 37 (previously presented): The method of Claim 28 wherein:  
said measuring comprises using a lock-in amplifier tuned to said frequency.

Claim 38 (currently amended): A method for determining a property of a portion  
of a substrate, the method comprising:

heating a region of conductive material in the substrate using power a  
continuous heat source whose power is modulated at a frequency that is  
predetermined to be sufficiently low to ensure that at least a majority of heat is  
transferred out of the region by diffusion rather than by a thermal wave;

measuring a change in reflectance of the region of conductive material at the  
frequency of modulation of the power ~~of heating~~ of the continuous heat source; and

using the change in reflectance of the conductive material in a programmed computer, to determine an indication of thermal conductivity of a dielectric material ~~in contact with~~ underneath the conductive material.

Claim 39 (previously presented): The method of Claim 38 wherein:  
the conductive material in the region is unpatterned.

Claim 40 (previously presented): The method of Claim 38 wherein:  
the conductive material in the region is comprised in a plurality of conductive lines.

Claim 41 (currently amended): The method of Claim 38 further comprising:  
changing the power of the continuous heat source used in said heating to a new power; and  
repeating at the new power each of said heating, said measuring and said using in said region.

Claim 42 (New): The method of Claim 38 further comprising:  
using the thermal conductivity of the dielectric material to determine an indication of a dielectric constant of the dielectric material.

Claim 43 (New): The method of Claim 38 further comprising:  
using the thermal conductivity of the dielectric material to determine an indication of a capacitance between the conductive material and an adjacent conductor.

Claim 44 (New): The method of Claim 38 further comprising:  
using the thermal conductivity of the dielectric material to determine an indication of speed of transmission of signals.